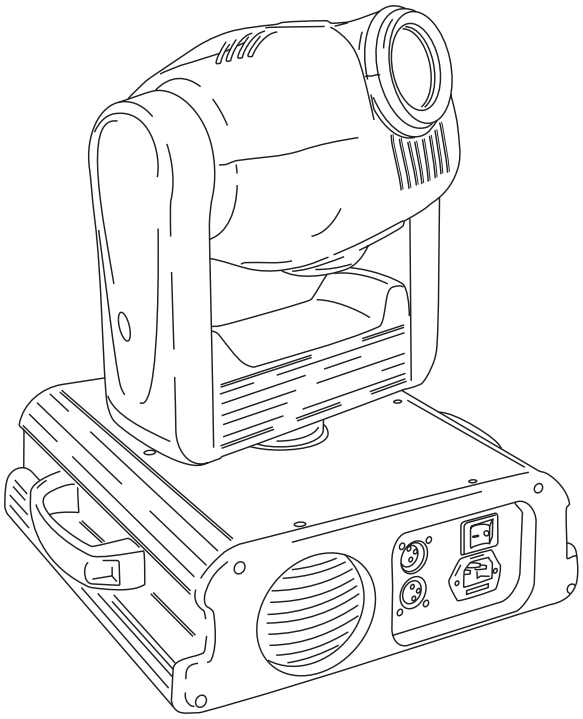
BEDIENUNGSANLEITUNG
USER MANUAL
MODE D'EMPLOI
MANUAL DEL USUARIO

TMH-155

Moving-Head



Für weiteren Gebrauch aufbewahren!
Keep this manual for future needs!
Gardez ce mode d'emploi pour des utilisations ultérieures!
Guarde este manual para posteriores usos.

CE

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MULTI-LANGUAGE-INSTRUCTIONS

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You can find the latest update of this user manual in the Internet under:
Vous pouvez trouvez la dernière version de ce mode d'emploi dans l'Internet sous:
Vd. puede encontrar la versión más reciente de este manual en el Internet bajo:

www.eurolite.de

English

USER MANUAL

TMH-155
Moving-Head

CAUTION!
Keep this device away from rain and moisture!
Unplug mains lead before opening the housing!

For your own safety, please read this user manual carefully before you initial start-up.

Every person involved with the installation, operation and maintenance of this device has to
- be qualilfied
- follow the instructions of this manual
- consider this manual to be part of the total product
- keep this manual for the entire service life of the product
- pass this manual on to every further owner or user of the product
- include every supplementay update with the original manual

INTRODUCTION

Thank you for having chosen a EUROLITE TMH-155. You will see you have acquired a powerful and versatile device.

Unpack your TMH-155.

Before you initial start-up, please make sure that there is no damage caused by transportation. Should there be any, consult your dealer and do not use the device.

SAFETY INSTRUCTIONS

CAUTION!
Be careful with your operations. With a dangerous voltage you can suffer a dangerous electric shock when touching the wires!

This device has left our premises in absolutely perfect condition. In order to maintain this condition and to ensure a safe operation, it is absolutely necessary for the user to follow the safety instructions and warning notes written in this user manual.

Important:
Damages caused by the disregard of this user manual are not subject to warranty. The dealer will not accept liability for any resulting defects or problems.

If the device has been exposed to drastic temperature fluctuation (e.g. after transportation), do not switch it on immediately. The arising condensation water might damage your device. Leave the device switched off until it has reached room temperature.

This device falls under protection-class I. The power plug must only be plugged into a protection class I outlet.

Never let the power-cord come into contact with other cables! Handle the power-cord and all connections with the mains with particular caution!

Make sure that the available voltage is not higher than stated on the rear panel.

Make sure that the power-cord is never crimped or damaged by sharp edges. Check the device and the power-cord from time to time.

Always disconnect from the mains, when the device is not in use or before cleaning it. Only handle the power-cord by the plug. Never pull out the plug by tugging the power-cord.

During the initial start-up some smoke or smell may arise. This is a normal process and does not necessarily mean that the device is defective.

Caution: During the operation, the housing becomes very hot.

Danger of burning! Never install the device on a highly flammable surfaces (e.g. fair carpet)!

HEALTH HAZARD!

Never look directly into the light source, as sensitive persons may suffer an epileptic shock (especially meant for epileptics)!

Keep away children and amateurs!

OPERATING DETERMINATIONS

This device is a moving-head spot for creating decorative effects. This product is only allowed to be operated with an alternating current of 230 V, 50 Hz and was designed for indoor use only.

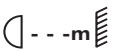
This device is designed for professional use, e.g. on stages, in discotheques, theatres etc.

Lighting effects are not designed for permanent operation. Consistent operation breaks will ensure that the device will serve you for a long time without defects.

Do not shake the device. Avoid brute force when installing or operating the device.

Never lift the fixture by holding it at the projector-head, as the mechanics may be damaged. Always hold the fixture at the transport handles.

When choosing the installation-spot, please make sure that the device is not exposed to extreme heat, moisture or dust. There should not be any cables lying around. Please make sure that the unit cannot be touched or bumped. You endanger your own and the safety of others!

The symbol 

determines the minimum distance from lighted objects. The minimum distance between light-output and the illuminated surface must be more than this value.

The device must only be installed on a non-flammable surface. In order to safeguard sufficient ventilation, leave 50 cm of free space around the device. Please note that heat-sensitive objects may be deformed or damaged by the emitted heat.

Make sure that the area below the installation place is blocked when rigging, derigging or servicing the fixture.

For overhead use (mounting height >100 cm), always fix the fixture with an appropriate safety-rope. Fix the safety-rope at the correct fixation points only. The safety-rope must never be fixed at the transport handles!

Only operate the fixture after having checked that the housing is firmly closed and all screws are tightly fastened.

The lamp must never be ignited if the objective-lens or any housing-cover is open, as discharge lamps may explose and emit a high ultraviolet radiation, which may cause burns.

The maximum ambient temperature t_a = 45° C must never be exceeded.

Operate the device only after having familiarized with its functions. Do not permit operation by persons not qualified for operating the device. Most damages are the result of unprofessional operation!

Please use the original packaging if the device is to be transported.

Please consider that unauthorized modifications on the device are forbidden due to safety reasons!

Never remove the serial barcode from the device as this would make the guarantee void.

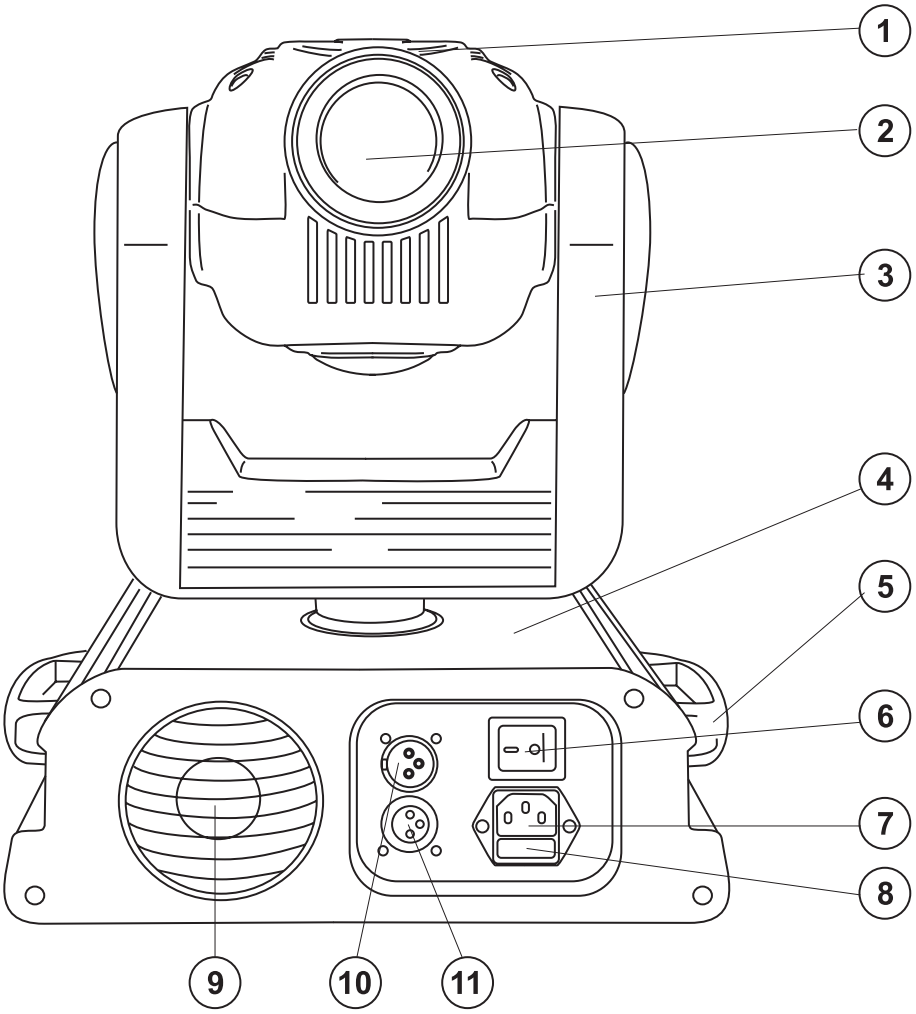
If this device will be operated in any way different to the one described in this manual, the product may suffer damages and the guarantee becomes void. Furthermore, any other operation may lead to dangers like short-circuit, burns, electric shock, lamp explosion, crash etc.

DESCRIPTION OF THE DEVICE

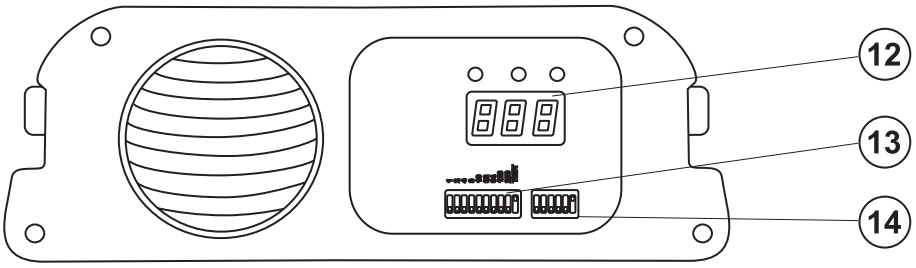
Features

Moving-Head with rotating gobos
Versatile Moving-Head with a wide range of illumination and decoration possibilities • 7 brilliant, dichroic colours plus white • 7 rotating metal gobos plus open • Manual focus • Strobe-effect with 1-13 flashes per second • Exact positioning within 360° Pan and 250° Tilt • 5 DMX-channels • 4-digit LED display for starting address • For bright 150 W discharge lamp • Suitable EUROLITE controllers: DMX Operator

Overview



(1) Projector head
(2) Objective-lens
(3) Yoke
(4) Base
(5) Carrying handle
(6) Power switch
(7) Power supply
(8) Fuseholder
(9) Ventilation fan
(10) DMX-In socket
(11) DMX-Out socket



(12) Display
(13) DIP-switches
(14) Function-DIP-switches

INSTALLATION

Installing/Replacing the lamp

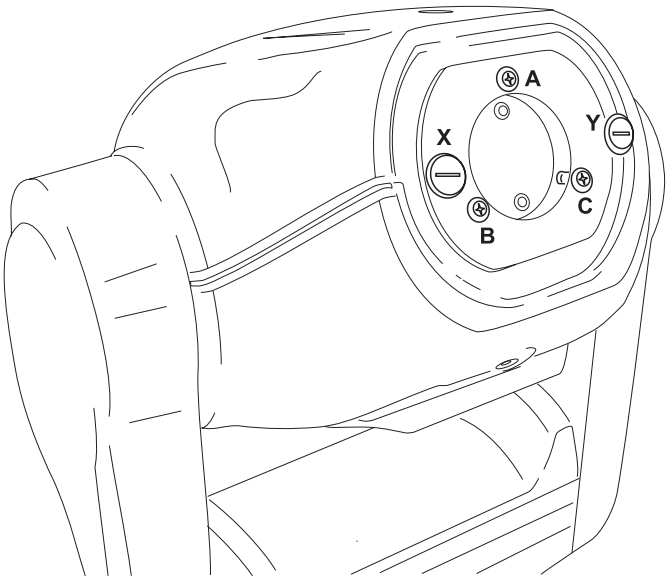
DANGER TO LIFE!
Only install the lamp with the device switched off!
Unplug from mains before!

For the installation, you need one HTI 90 V/150 W GY-9.5 lamp.

The lamp must only be changed when wearing appropriate protective clothing (protection glasses, protection gloves, helmet with sight, leather apron).

CAUTION!
The lamp has to be replaced when it is damaged or deformed due to the heat!

The lamp life given by the manufacturer must never be exceeded. This is why you need to take notes on the operational time of the lamp and replace the lamp in time.



Keep exchanged lamp in a protective container and remove accordingly.

During the operation, the lamp reaches temperatures of up to 600° C.

Before replacing the lamp, unplug mains lead and let the lamp cool down (approx. 10 minutes).

During the installation do not touch the glass-bulbs bare-handed! Please follow the lamp manufacturer's notes!

Do not install lamps with a higher wattage! Lamps with a higher wattage generate temperatures the device was not designed for. Damages caused by non-observance are not subject to warranty.

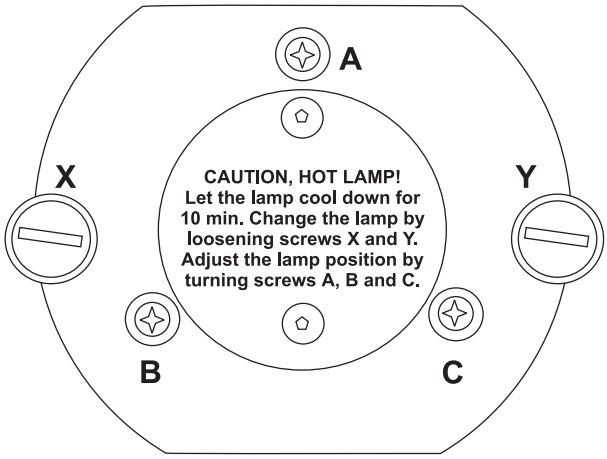
Procedure:

Step 1: Unscrew the fixation screws of the lamp cover and remove it.
Step 2: Unscrew the knurled-head screws of the lamp holder and remove it.
Step 3: If replacing the lamp, remove the old lamp from the lamp holder.
Step 4: Insert the lamp into the lamp holder.
Step 5: Replace the lamp holder and tighten the knurled-head screws.
Step 6: Adjust the lamp as described under lamp adjustment.
Step 7: Replace the lamp cover and tighten the fixation screws.

Do not operate this device with opened cover!

Lamp adjustment

The lampholder is aligned at the factory. Due to differences between lamps, fine adjustment may improve light performance.


A
X
Y
CAUTION, HOT LAMP!
Let the lamp cool down for 10 min. Change the lamp by loosening screws X and Y. Adjust the lamp position by turning screws A, B and C.
B
C

Strike the lamp, open the shutter and the iris, set the dimmer intensity onto 100 % and focus the light on a flat surface (wall). Center the hot-spot (the brightest part of the beam) using the 3 adjustment screws **"A, B, C"**. Turn one screw at a time to drag the hot-spot diagonally across the projected image. If you cannot detect a hot-spot, adjust the lamp until the light is even.

To reduce a hot-spot, pull the lamp in by turning all three screws **"A, B, C"** clockwise ¼-turn at a time until the light is evenly distributed.

If the light is brighter around the edge than it is in the center, or if light output is low, the lamp is too far back in the reflector. "Push" the lamp out by turning the screws **"A, B, C"** counterclockwise ¼-turn at a time until the light is bright and evenly distributed.

Rigging

DANGER TO LIFE!

Please consider the EN 60598-2-17 and the respective national norms during the installation! The installation must only be carried out by an authorized dealer!

The installation of the projector has to be built and constructed in a way that it can hold 10 times the weight for 1 hour without any harming deformation.

The installation must always be secured with a secondary safety attachment, e.g. an appropriate catch net. This secondary safety attachment must be constructed in a way that no part of the installation can fall down if the main attachment fails.

When rigging, derigging or servicing the fixture staying in the area below the installation place, on bridges, under high working places and other endangered areas is forbidden.

The operator has to make sure that safety-relating and machine-technical installations are approved by an expert before taking into operation for the first time and after changes before taking into operation another time.

The operator has to make sure that safety-relating and machine-technical installations are approved by an expert after every four year in the course of an acceptance test.

The operator has to make sure that safety-relating and machine-technical installations are approved by a skilled person once a year.

Procedure:
The projector should be installed outside areas where persons may walk by or be seated.

IMPORTANT! OVERHEAD RIGGING REQUIRES EXTENSIVE EXPERIENCE, including (but not limited to) calculating working load limits, installation material being used, and periodic safety inspection of all installation material and the projector. If you lack these qualifications, do not attempt the installation yourself, but instead use a professional structural rigger. Improper installation can result in bodily injury and.or damage to property.

The projector has to be installed out of the reach of people.

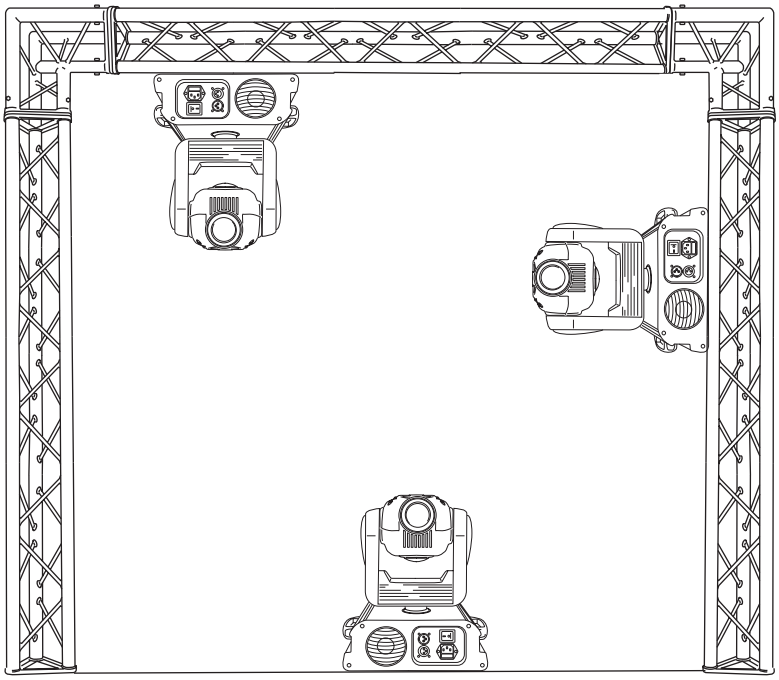
If the projector shall be lowered from the ceiling or high joists, professional trussing systems have to be used. The projector must never be fixed swinging freely in the room.

Caution: Projectors may cause severe injuries when crashing down! If you have doubts concerning the safety of a possible installation, do NOT install the projector!

Before rigging make sure that the installation area can hold a minimum point load of 10 times the projector's weight.

DANGER OF FIRE!
When installing the device, make sure there is no highly-inflammable material (decoration articles, etc.) within a distance of min. 0.5 m.

CAUTION!
Use 2 appropriate clamps to rig the fixture on the truss.
Follow the instructions mentioned at the bottom of the base.
Make sure that the device is fixed properly! Ensure that the structure (truss) to which you are attaching the fixtures is secure.



The Moving-Head can be placed directly on the stage floor or rigged in any orientation on a truss without altering its operation characteristics (see the drawing).

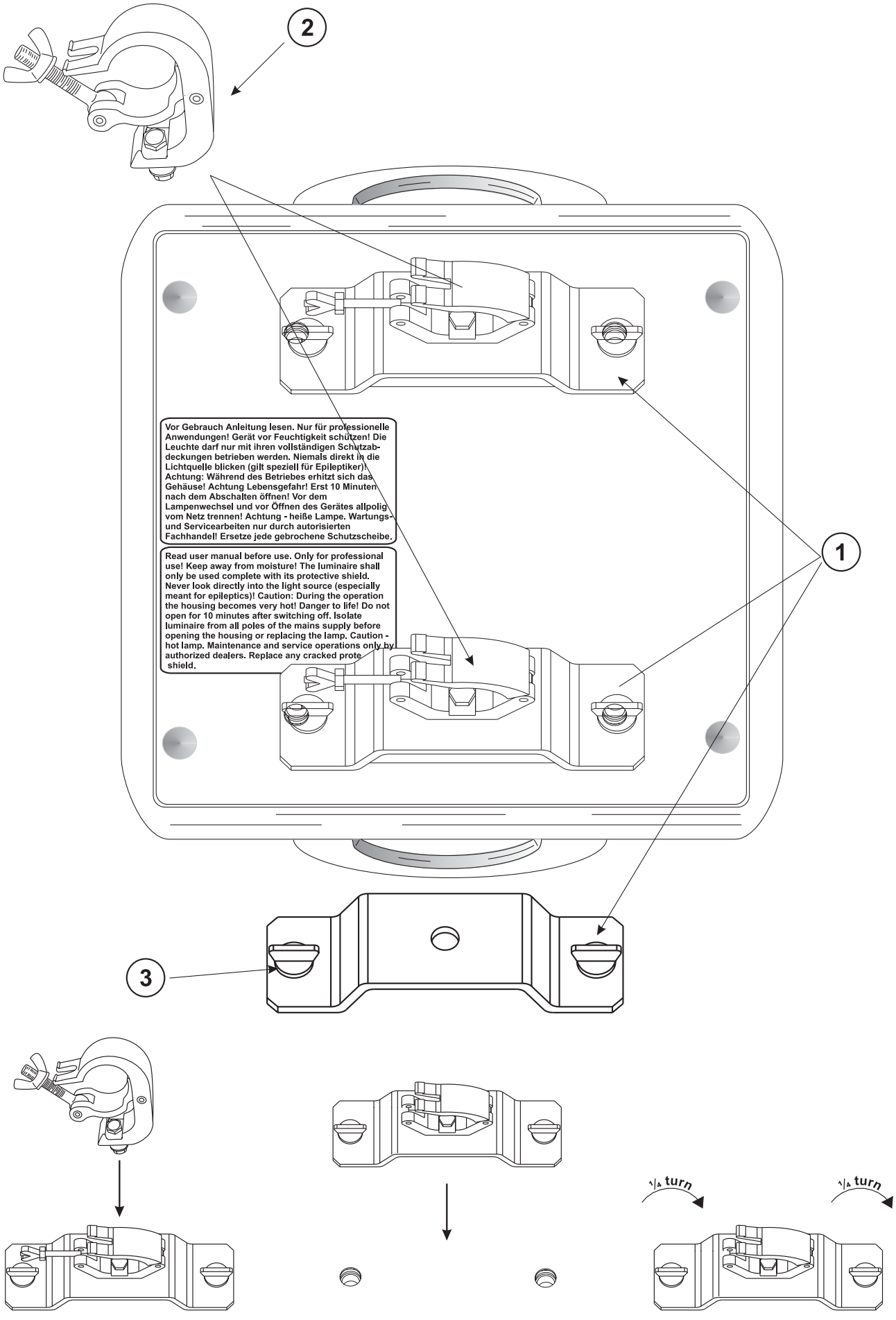
The fixture's base enables to be mounted in two ways. Use the clamps with screws M10 or M8 - check the base bottom.

For overhead use (mounting height >100 cm), always install a safety-rope that can hold at least 12 times the weight of the fixture. You must only use safety-ropes with quick links with screw cap. Pull the safety-rope through the attachment eyelet and over the trussing system or a safe fixation spot. Insert the end in the quick link and tighten the fixation screw.

The maximum drop distance must never exceed 20 cm.

A safety rope which already hold the strain of a crash or which is defective must not be used again.

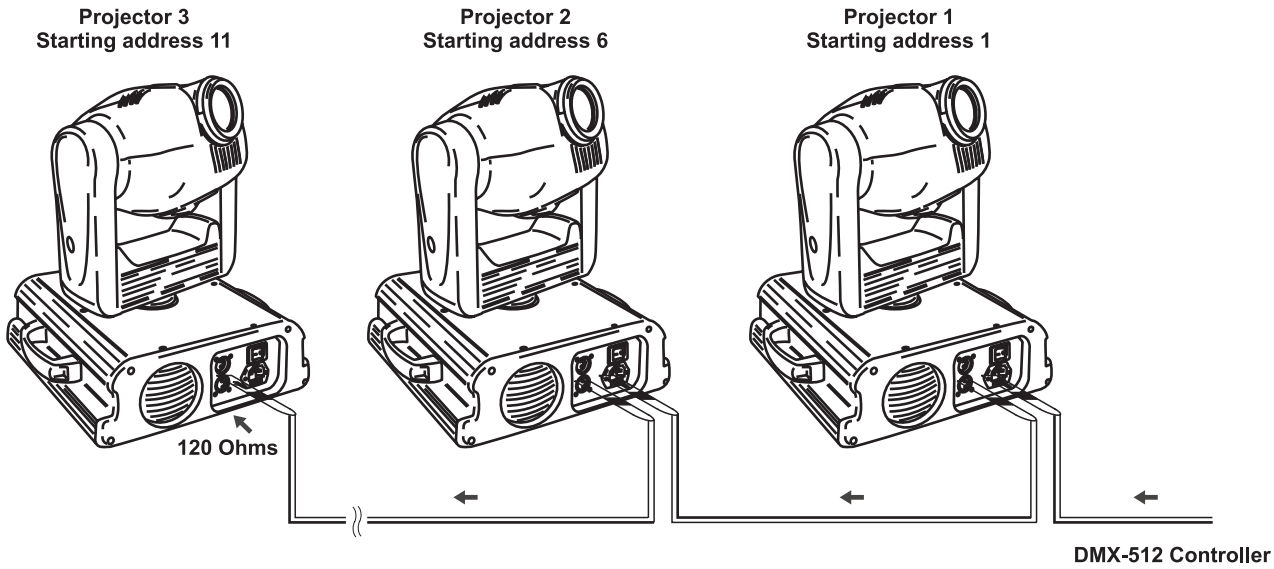
DANGER TO LIFE!
Before taking into operation for the first time, the installation has to be approved by an expert!


2
Vor Gebrauch Anleitung lesen. Nur für professionelle Anwendungen! Gerät vor Feuchtigkeit schützen! Die Leuchte darf nur mit ihren vollständigen Schutzabdeckungen betrieben werden. Niemals direkt in die Lichtquelle blicken (gilt speziell für Epileptiker)! Achtung: Während des Betriebes erhitzt sich das Gehäuse! Achtung Lebensgefahr! Erst 10 Minuten nach dem Abschalten öffnen! Vor dem Lampenwechsel und vor Öffnen des Gerätes allpolig vom Netz trennen! Achtung - heiße Lampe. Wartungs- und Servicearbeiten nur durch autorisierten Fachhandel! Ersetze jede gebrochene Schutzscheibe.
Read user manual before use. Only for professional use! Keep away from moisture! The luminaire shall only be used complete with its protective shield. Never look directly into the light source (especially meant for epileptics)! Caution: During the operation the housing becomes very hot! Danger to life! Do not open for 10 minutes after switching off. Isolate luminaire from all poles of the mains supply before opening the housing or replacing the lamp. Caution - hot lamp. Maintenance and service operations only by authorized dealers. Replace any cracked prote shield.
1
3
1/8 turn
1/8 turn

(1) Omega-holders
(2) Clamp
(3) Quick-lock fastener

Screw one clamp each via a M12 screw and nut onto the Omega-holders.
Insert the quick-lock fasteners of the first Omega-holder into the respective holes on the bottom of the device. Tighten the quick-lock fasteners fully clockwise. Install the second Omega-holder.

DMX-512 connection / connection between fixtures



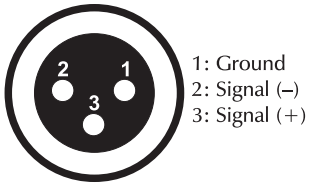
The wires must not come into contact with each other, otherwise the fixtures will not work at all, or will not work properly.

Only use a stereo shielded cable and 3-pin XLR-plugs and connectors in order to connect the controller with the fixture or one fixture with another.

Occupation of the XLR-connection:

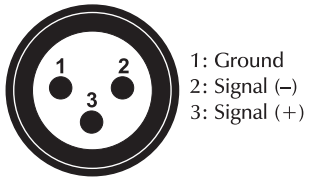
DMX-output

XLR mounting-socket:



DMX-input

XLR mounting-plug:



If you are using controllers with this occupation, you can connect the DMX-output of the controller directly with the DMX-input of the first fixture in the DMX-chain. If you wish to connect DMX-controllers with other XLR-outputs, you need to use adapter-cables.

Building a serial DMX-chain:
Connect the DMX-output of the first fixture in the DMX-chain with the DMX-input of the next fixture. Always connect one output with the input of the next fixture until all fixtures are connected.

Caution: At the last fixture, the DMX-cable has to be terminated with a terminator. Solder a 120 Ω resistor between Signal (–) and Signal (+) into a 3-pin XLR-plug and plug it in the DMX-output of the last fixture.

Connection with the mains

Connect the device to the mains with the enclosed power supply cable.

The occupation of the connection-cables is as follows:

Cable	Pin	International
Brown	Live	L
Blue	Neutral	N
Yellow/Green	Earth	⏚

The earth has to be connected!

If the device will be directly connected with the local power supply network, a disconnection switch with a minimum opening of 3 mm at every pole has to be included in the permanent electrical installation.

Lighting effects must not be connected to dimming-packs.

OPERATION

After you connected the effect to the mains, the TMH-155 starts running. During the Reset, the motors are trimmed and the device is ready for use afterwards.

You can control the projectors individually via your DMX-controller. Every DMX-channel has a different occupation with different features. In order to call up the different features, you first have to open the shutter (control channel 5, DMX-value 241-255).

Turn the focus-screw next to the objective-lens for adjusting the focus in order to obtain a sharp projection.

Addressing

Each projector occupies 6 channels. To ensure that the control signals are properly directed to each projector, the projector requires adressing. This is to be done for every single projector by changing the DIP switches as set out in this table.

The starting address is defined as the first channel from which the TMH-155 will respond to the controller. If you set, for example, the address to channel 7, the TMH-155 will use the channel 7 to 12 for control.

Please make sure that you don't have any overlapping channels in order to control each TMH-155 correctly and independently from any other fixture on the DMX data link. If two, three or more TMH-155 are addressed similarly, they will work similarly.

Occupation of the DIP-switches:

Setting the DMX-starting address:	DIP-switch no.	1	2	3	4	5	6	7	8	9
Projector number & channels	DMX-starting address	1	2	4	8	16	32	64	128	256
Device 1 - channels 1-6	On	▲								
	Off		▽	▽	▽	▽	▽	▽	▽	▽
Device 2 - channels 7-12	On	▲	▲	▲						
	Off				▽	▽	▽	▽	▽	▽
Device 3 - channels 13-18	On	▲		▲	▲					
	Off		▽			▽	▽	▽	▽	▽
Device 4 - channels 19-24	On	▲	▲			▲				
	Off			▽	▽		▽	▽	▽	▽
Device 5 - channels 25-30	On	▲			▲	▲				
	Off		▽	▽	▽		▽	▽	▽	▽

Controlling:
After having addressed all TMH-155, you may now start operating these via your lighting controller.

Note:
After switching on, the TMH-155 will automatically detect whether DMX 512 data is received or not. If the data is received, the the display will show "A001" with actually set address and the DMX-LED is lit. If there is no data received at the DMX-input, the DMX-LED is off.
This situation can occur if:
- the 3 PIN XLR plug (cable with DMX signal from controller) is not connected with the input of the TMH-155.
- the controller is switched off or defective, if the cable or connector is defective or the signal wires are swap in the input connector.

DMX-PROTOCOL

Control channel 1 - Horizontal movement (Pan) (within 360°)
Push slider up in order to move the head horizontally (PAN).
Gradual head adjustment from one end of the slider to the other (0-255, 128-center). The head can be stopped at any position you wish.

Control channel 2 - Vertical movement (Tilt) (within 250°)
Push slider up in order to move the head vertically (TILT).
Gradual head adjustment from one end of the slider to the other (0-255, 128-center). The head can be stopped at any position you wish.

Control channel 3 - Colour-wheel

DMX-value	Feature
0-15	Open / white
16-31	Pink
32-47	Blue
48-63	Orange
64-79	Green
80-95	Violet
96-111	Yellow
112-127	Red
128-255	Rainbow effect with increasing speed

Control channel 4 - Rotating gobo index, gobo rotation

DMX-value	Feature
0-127	Gobo indexing
128-189	Forwards gobo rotation with decreasing speed
190-193	No rotation
194-255	Backwards gobo rotation with increasing speed

Control channel 5 - Rotating gobo-wheel

DMX-value	Feature
0-31	Open
32-63	Gobo 1
64-95	Gobo 2
96-127	Gobo 3
128-159	Gobo 4
160-191	Gobo 5
192-223	Gobo 6
224-255	Gobo 7

Control channel 6 - Shutter, Dimmer

DMX-value	Feature
0-39	Shutter closed
40-128	Dimmer control (shutter open)
129-139	No function (shutter open)
140-243	Strobo effect with increasing speed (max. 13 flashes/second)
244-255	No function (shutter open)

Special settings

Via the Function-DIP-switches, you can adjust different modes and settings:

Mode/Function:	DIP-switch no.	1	2	3	4	5	6
Not occupied	On	▲					
	Off		▽	▽	▽	▽	▽
Activate Rainbow	On		▲				
	Off	▽		▽	▽	▽	▽
Call up colour in every pos.	On			▲			
	Off	▽	▽		▽	▽	▽
Not occupied	On				▲		
	Off	▽	▽	▽		▽	▽
Invert PAN-movement	On					▲	
	Off	▽	▽	▽	▽		▽
Invert TILT-movement	On						▲
	Off	▽	▽	▽	▽	▽	

CLEANING AND MAINTENANCE

The operator has to make sure that safety-relating and machine-technical installations are inspected by an expert after every four years in the course of an acceptance test.
The operator has to make sure that safety-relating and machine-technical installations are inspected by a skilled person once a year.
The following points have to be considered during the inspection:

1) All screws used for installing the devices or parts of the device have to be tighly connected and must not be corroded.
2) There must not be any deformations on housings, fixations and installation spots (ceiling, suspension, trussing).
3) Mechanically moved parts like axles, eyes and others must not show any traces of wearing (e.g. material abrading or damages) and must not rotate with unbalances.
4) The electric power supply cables must not show any damages, material fatigue (e.g. porous cables) or sediments. Further instructions depending on the installation spot and usage have to be adhered by a skilled installer and any safety problems have to be removed.

DANGER TO LIFE!
Disconnect from mains before starting maintenance operation!

We recommend a frequent cleaning of the device. Please use a moist, lint-free cloth. Never use alcohol or solvents!

CAUTION!
The lens has to be replaced when it is obviously damaged, so that its function is impaired, e. g. due to cracks or deep scratches!

The objective lens will require weekly cleaning as smoke-fluid tends to building up residues, reducing the light-output very quickly. The cooling-fans should be cleaned monthly.
The gobos may be cleaned with a soft brush. The interior of the fixture should be cleaned at least annually using a vacuum-cleaner or an air-jet.
The dichroic colour-filters, the gobo-wheel and the internal lenses should be cleaned monthly.
There are no serviceable parts inside the device except for the lamp and the fuse. Maintenance and service operations are only to be carried out by authorized dealers.
Please refer to the instructions under "Installing/Replacing the lamp".

Replacing the fuse

If the lamp burns out, the fine-wire fuse of the device might fuse, too. Only replace the fuse by a fuse of same type and rating.
Before replacing the fuse, unplug mains lead.

Procedure:

Step 1: Unscrew the fuseholder on the rearpanel with a fitting screwdriver from the housing (anti-clockwise).
Step 2: Remove the old fuse from the fuseholder.
Step 3: Install the new fuse in the fuseholder.
Step 4: Replace the fuseholder in the housing and fix it.

Should you need any spare parts, please use genuine parts.
If the power supply cable of this device becomes damaged, it has to be replaced by a special power supply cable available at your dealer.
Should you have further questions, please contact your dealer.

TECHNICAL SPECIFICATIONS

Power supply:	230 V/50 Hz
Power consumption:	265 W
DMX-control-channels:	5
DMX-512-connection:	3-pin XLR
Flash-rate:	13 Hz
Colour-wheel:	7 dichroic filters and open
Rotating gobo-wheel:	7 gobos and open
Maximum PAN-movement:	360°
Maximum TILT-movement:	250°
Length of base:	330 mm
Width of yoke:	335 mm
Height (head horizontal):	360 mm
Weight (net):	12 kg
Maximum ambient temperature t_a:	45° C
Maximum housing temperature t_B (steady state):	90° C
Min.distance from flammable surfaces:	0.5 m
Min.distance to lighted object:	0.5 m
Fuse:	F 5 A, 250 V
Fitting lamps:	
OMNILUX OTI 90V/150W GY 9,5 750h 6500K	No. 91201395
OMNILUX OTI 95V/152W GY 9,5 2000h 5000K	No. 91201396
OSRAM HTI 150W 90V/150W GY9,5 750h 6900K	No. 91201327
OSRAM HTI 152W 95V/150W GY9,5 2000h 5000K	No. 91201329
Recommended controllers:	
EUROLITE DMX Operator	No. 70064520
Wizard-512 DMX-Software + Interface	No. 51860101
Wizard-1024 DMX-Software + Interface	No. 51860110

Please note: Every information is subject to change without prior notice. 31.07.2003 ©